

ABSTRACT

A watermarking system allowing an appended-type watermark to be easily inserted into a scaled-up/down image without deteriorating the detection accuracy of the appended-type watermark is disclosed. A first scaling factor of an input watermarked image is detected by detecting a copy control watermark from the input watermarked image. It is determined whether a watermark including a second scaling factor is detected from the input watermarked image. When the watermark including the second scaling factor fails to be detected, a second watermark including the first scaling factor is created and embedded into the input watermarked image and further an appended-type watermark is inserted into the input watermarked image. When the watermark including the second scaling factor is detected, the first and second scaling factors are used to calculate a third scaling factor, which is used to detect the appended-type watermark.